caused by pannus ingrowth and possibly caused by rupture of the support, can occur and is thus worth reporting.

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12/8/88051

Minimally invasive coronary artery surgery

To the Editor:

We read with great interest the editorial by Reardon and associates[1] regarding minimally invasive coronary artery surgery. We share their concerns about the safety of minimally invasive coronary artery bypass, particularly when the left internal thoracic artery is used to bypass the left anterior descending artery, our "gold standard." The operation with the best track record may have been converted into an extremely dangerous surgical tool.

Many surgeons attended meetings dealing with minimally invasive coronary artery surgery and returned with great enthusiasm. From the outset, however, we were very concerned that small thoracic incisions were not the ideal approach from the technical and safety standpoints in patients who could become unstable, regardless of whether the surgeon had access to the femoral vessels.

We have adopted the surgical exposure described by Arom, Emery, and Nicoloff.[2] We modified their techniques to use a complete sternotomy approach via a small skin incision, usually 5 inches (12.5 cm) in length. Because of the skin's great elasticity, we can perform a complete median sternotomy using the standard sternal saw. In this way, we have complete access to the heart via a small skin incision that is cosmetically appealing.

Through this approach we can mobilize both internal thoracic arteries and use the radial artery as a free graft to reach diagnonal branches, the ramus marginalis, or proximal circumflex branches. Because we use cardiopulmonary bypass and the standard antegrade/retrograde cardioplegia with the heart still, we can construct perfect anastomoses. So much has been written about the deleterious effects of cardiopulmonary bypass that the safety of a 5- to 15-minute pump run with cardioplegic arrest has been forgotten.

We have used this strategy and have not had a single instance of symptoms or signs of coronary insufficiency from the operations performed. We wonder whether the surgeons who have commercial interests in the companies promoting minimally invasive surgery can claim this completeness of revascularization and excellence of results. We congratulate Dr. Reardon and his group for putting a word of caution to the enthusiasm that minimally invasive coronary surgery has generated.

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Right heart bypass with an extracardiac conduit: A cautionary tale!

To the Editor:

In this Journal, we[1] have recently commented on our use of total right heart bypass with an extracardiac conduit.

In performing this procedure, taking a generous cuff of the inferior part of the right atrial wall at its junction with the inferior caval vein, we found it possible to "upsize" the diameter of the conduit over and above the extant diameter of the caval vein at the level of the diaphragm.

A more recent experience with this surgical approach in a 4-year-old child with complex cyanotic congenital heart disease revealed a hidden trap: Rapid accumulation of ascites in the early postoperative period was accompanied by a mean gradient of 10 mm Hg between the inferior caval vein (17 mm Hg) and the conduit (7 mm Hg). The difference in pressures had been noticed at the time of the operation but, because of the external appearance of a wide trumpet-shaped lower anastomosis, the measurements had been discounted as "artifact." Because of the increasing ascites, an exploration became necessary when the gradient across the lower anastomosis was also demonstrated by direct manometry.

On takedown, we observed that a large and prominent eustachian valve had been caught up in the anastomosis, producing a partial curtain across the venous pathway. After excision of the valve and reconstruction of the anastomosis, the gradient was abolished.

When writing on prominence of the eustachian and the thebesian valves, Trento and colleagues[2] commented that the structures might be of "functional significance only if it were necessary to perform a Fontan procedure when they might obstruct flow through an atriopulmonary (or atrioventricular) anastomosis." A cautionary tale!

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